

## Application for Mineral Mine Plan Revision or Amendment

Operator:	LISBON VALLEY MINING Co LLC		
Mine Name:	LISBON VALLEY MINE	File Number:	M/ 037-1020
Provide a detailed listing of all changes to the mining and reclamation plan that will be required as a result of this change. Individually list all maps and drawings that are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise or amend the existing Mining and Reclamation Plan. <b>Include page, section and drawing numbers as part of the description.</b>			
<b>DETAILED SCHEDULE OF CHANGES TO THE MINING AND RECLAMATION PLAN</b>			
		<b>DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED</b>	
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I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments and obligations, herein.

Print Name LANTZ INDERGARD

Lat. 34.1711 N, Long. 118.1361 W  
Sign Name, Position

Date 4-6-10

## Return to:

State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801  
Phone: (801) 538-5291 Fax: (801) 359-3940

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### Instructions – Amend or Revise Mining Plan

**FOR DOGM USE ONLY:**

File #: M/ /

Approved: \_\_\_\_\_

Bond Adjustment: from (\$)  
to \$

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**TABLE OF CONTENTS (Continued)**

Appendix A - Sentinel East Pit Backfilling Amendment .....

Appendix B – Surface Water Diversion Design.....

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two liners to act as a drainage pathway for the leak detection system. A gravel sump will be installed in the low corner of the pond floor to collect seepage in the geodrain material. A riser pipe will extend up between the liners to the crest of the pond to serve as the monitoring well of the leak detection system. The riser pipe will be a 4-inch diameter pipe so that a sump pump may be installed for solution removal in the event a leak occurs in the primary liner.

### **3.3.8 Surface Water Diversion**

A series of diversion channels have been designed to route runoff around the active mining areas. The diversion channels are designed to pass the peak flow resulting from the 100-yr., 24-hr. design storm event. Based on data presented by NOAA for this region, this event produces 3.4 inches of precipitation. Based on the topography and upgradient drainage areas, the typical channel cross section to carry the estimated peak flows will be a trapezoidal section with a 5-ft bottom width, side slopes excavated at 2H:1V and to maximum depth of four feet. Rock check structures will be installed in the diversion channels to control erosion and sediment. Diversion channel dimensions, rock size, and flow depths are included in Appendix B.

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## **3.4 SUPPORT FACILITIES**



## LISBON VALLEY MINING CO

Mr. Lynn Jackson  
US Bureau of Land Management  
82 East Dogwood  
Moab Utah 84532

April 6, 2010

Mr. Tom Munsen  
Utah Division of Oil, Gas, & Mining  
1594 West North Temple Suite 1210  
Salt Lake City, UT 84114-5801

Re: Adjustment to Approved Mine Plan Amendment. Drainage Detail Sentinel East Backfilling. Lisbon Valley Mining Company LLC. 920 South County Road 313, La Sal, Utah, 84530.

Dear Lynn and Tom:

The Lisbon Valley Mining Co LLC (LVMC) has attached additional detail pertaining to diversion design around the toe of Waste Dump C. The embedded site plan on the following page shows the location of Diversion Channels C1 and C4.

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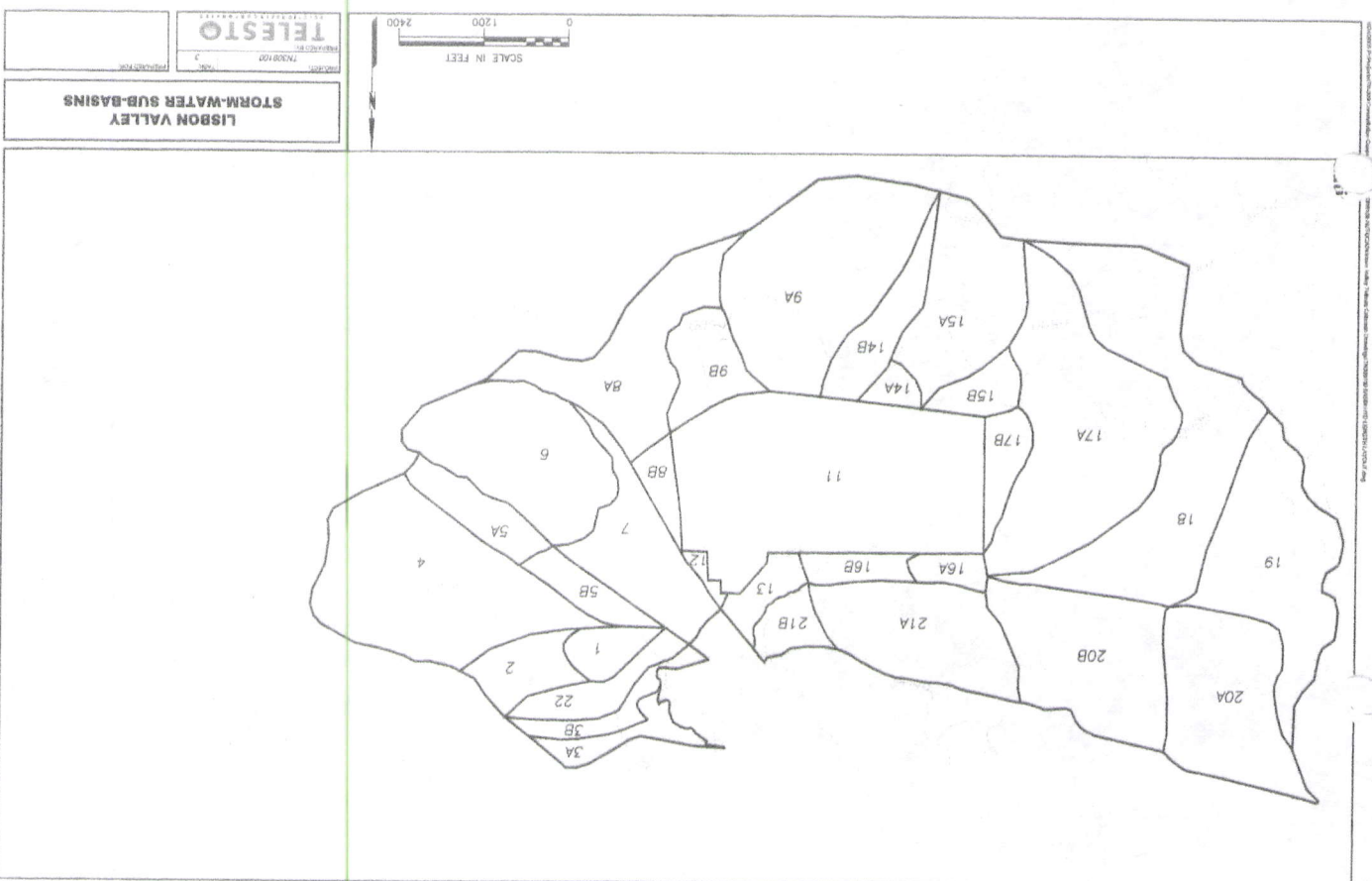
## **HEC Model and Diversion Channel Design**

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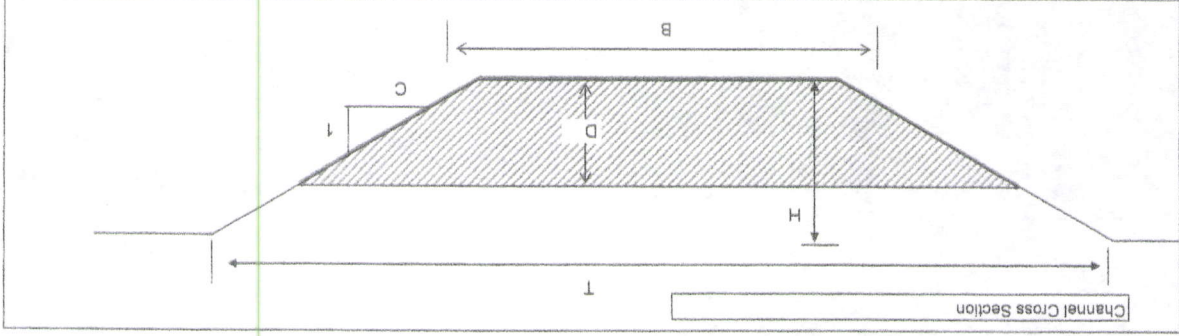
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Conceptual Channel Design  
Constellation Copper  
Lisbon Valley  
8/23/2005

CHANNEL SUMMARY

Channel Name	Average Slope (ft/ft)	Channel Length (ft)	100-Year, 24-Hour Design Flow (Peak Discharge) (cfs)	Flow Depth (ft)	Flow Velocity (ft/s)	Base Width (ft)	Left Side Slope (C)	Right Side Slope (C)	Freeboard (ft)	Design Depth (ft)	Design Width (ft)	Design Top Width (ft)	Estimated Riprap D <sub>50</sub> Size (in.)
C-1	0.100	1159	35.73	0.68	7.19	6.0	2	2	1.0	1.7	12.7	21.3	8.0
C-2	0.100	611	119.97	0.84	8.53	15.0	2	2	1.0	1.8	22.4	11.4	10.0
C-3A	0.030	2472	28.60	0.86	5.81	4.0	2	2	1.0	1.9	11.4	14.4	4.0
C-3B	0.030	2066	50.45	1.20	6.59	4.0	2	2	1.0	2.2	12.8	14.4	5.5
C-4	0.020	4049	76.74	1.59	6.69	4.0	2	2	1.0	2.6	14.4	14.4	5.5
C-5A	0.028	2900	55.96	1.29	6.61	4.0	2	2	1.0	2.3	13.2	14.1	6.0
C-5B	0.053	1000	61.21	1.03	7.39	6.0	2	2	1.0	2.0	14.1	14.1	7.5
C-6	0.017	986	235.14	1.81	19.66	3.0	2	2	1.0	2.8	14.2	14.2	7.5
C-7	0.017	718	215.14	2.59	7.42	6.0	2	2	1.0	3.6	20.4	20.4	8.0
C-8A	0.023	1170	172.46	2.10	8.08	6.0	2	2	1.0	3.1	18.4	18.4	8.0
C-8B	0.023	1910	172.46	1.45	20.24	3.0	2	2	1.0	2.4	12.8	12.8	5.5
C-9	0.013	1087	151.30	2.57	6.46	4.0	2	2	1.0	3.6	18.3	18.3	8.0
C-10	0.014	2120	66.40	1.64	5.55	4.0	2	2	1.0	2.6	14.6	14.6	4.0
C-11	0.017	2343	22.06	0.85	4.52	4.0	2	2	1.0	1.9	11.4	11.4	3.0
C-15	0.039	433	161.15	1.34	8.23	12.0	2	2	1.0	2.3	21.3	21.3	8.0



TN309100-2 COE Riprap (REV 2) XLS

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## **Rock Check Structure Design**

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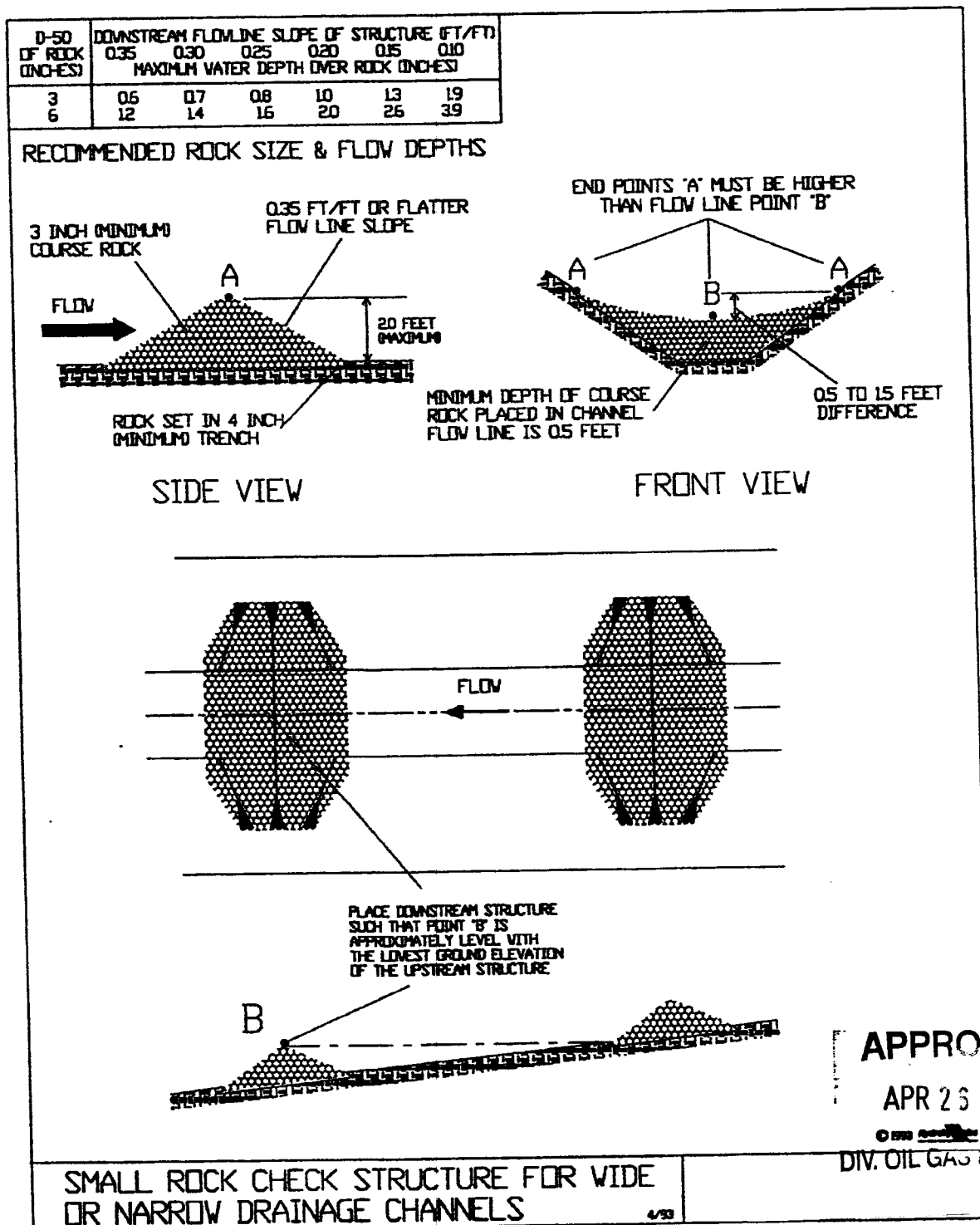


Figure 22: Illustration of How Rock Check Structures are to be Installed.